



TEST REPORT

For SAR



Report No. : CHTW24030037 Report verification: 

Project No..... : SHT2403015401W

FCC ID..... : 2ASWW-GT40

Applicant's name : XINCHUANGXIN INTERNATIONAL CO. LTD

Address..... : ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL

Test item description : Feature phone

Trade Mark : CORN

Model/Type reference..... : GT40

Listed Model(s) :

Standard : FCC 47 CFR Part2.1093
IEEE Std C95.1: 1999 Edition
IEEE Std 1528: 2013

Date of receipt of test sample..... : Mar. 05, 2024

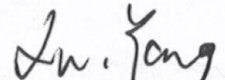
Date of testing..... : Mar. 06, 2024- Mar. 22, 2024

Date of issue..... : Mar. 27, 2024

Result..... : PASS

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The test report merely correspond to the test sample.

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1. Statement of Compliance

Maximum Reported SAR (W/kg @1g)		
Type	Test setting	PCE
Head	Cheek	0.748
Body-worn	Dist.= 15mm	0.920

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg@1g) specified in FCC 47 CFR part 2 (2.1093) and IEEE Std C95.1,
2. This device had been tested in accordance with the measurement methods and procedures specified in IEEE 1528 and FCC KDB publications.

2. Test Standards and Report version

2.1. Test Standards

The tests were performed according to following standards:

[FCC 47 Part 2.1093](#): Radiofrequency radiation exposure evaluation: portable devices.

[IEEE Std C95.1, 1999 Edition](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz

[IEEE Std 1528™-2013](#): IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

FCC published RF exposure KDB procedures:

[865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04](#): SAR Measurement Requirements for 100 MHz to 6 GHz

[865664 D02 RF Exposure Reporting v01r02](#): RF Exposure Compliance Reporting and Documentation Considerations

[447498 D04 Interim General RF Exposure Guidance v01](#): Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies

[648474 D04 Handset SAR v01r03](#): SAR Evaluation Considerations for Wireless Handsets

[941225 D01 3G SAR Procedures v03r01](#): SAR Measurement Procedures for 3G Devices

[941225 D05 SAR for LTE Devices v02r05](#): SAR Evaluation Considerations for LTE Devices

[TCB workshop](#) April, 2019; Page 19, Tissue Simulating Liquids (TSL)

2.2. Report version

Revision No.	Date of issue
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3. Summary

3.1. Client Information

Applicant:	XINCHUANGXIN INTERNATIONAL CO. LTD
Address:	ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL
Manufacturer:	Shenzhen Chiteng Technology Co.,LTD
Address:	Second Floor,Area A, Building 4, Huiye Technology Workshop, Guanguang Road, Tangjia Community, Gongming Street, Guangming New District, Shenzhen, Guangdong

3.2. Product Description

Main unit	
Name of EUT:	Feature phone
Trade Mark:	CORN
Model No.:	GT40
Listed Model(s):	-
Power supply:	DC 3.7V from Li-ion Battery
Hardware version:	ZS621TF_MB_V1.0
Software version:	ZS621TF_48X128_240320_B24410TF_3_GT40_CORN_EnFrPoSp_V01_20240314
Device Dimension:	Length x Width x Thickness (mm): 132 x 53 x 13
Device Category:	Portable
Product stage:	Production unit
RF Exposure Environment:	General Population/Uncontrolled
HTW test sample No.:	YPHT24030154002
Support SIM card quantity:#1	☐ Single card ☒ Double card
Ancillary unit	
Battery information: #2	BL-19A Voltage: 3.7V Capacity: 1800mAh 3.7V Li-ion BATTERY 6.66Wh

Note:

#1: The Test EUT support two SIM card, so all the tests are performed at each SIM card mode, the datum recorded is the worst case for all the mode at SIM1 Card mode.

#2: The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power.

3.3. RF Specification Description

GSM				
Operation Band:	☒ GSM850 ☒ PCS1900			
Support type:	☒ GSM ☒ GPRS ☐ EGPRS			
Modulation type:	☒ GMSK ☐ 8PSK			
Power Class:	☒ GSM850: Class 4 ☒ PCS1900: Class 1			
Device Class:	B			
GPRS Multi-Slot Class:	12			
Note: This device doesn't support DTM (Dual Transfer Mode).				
WCDMA				
Operation Band:	☒ Band II ☒ Band IV ☒ Band V			
Support type:	☒ UMTS Rel. 99 (Voice & Data) ☒ HSDPA ☒ HSUPA			
Modulation type:	☒ QPSK			
Power Class:	Class 3			
LTE				
Operation Band:	☒ Band 2 ☒ Band 4 ☒ Band 5 ☒ Band 7			
	☐ Band 12 ☐ Band 13 ☒ Band 17 ☐ Band 25			
	☐ Band 26 ☐ Band 30 ☐ Band 66 ☐ Band 71			
	☐ Band 38 ☐ Band 41			
Support type:	☒ Single Carrier ☐ CA-UL ☐ CA-DL ☐ MIMO-UL			
Modulation type:	☒ QPSK ☒ 16QAM			
Power Class:	☒ Class 3 ☐ Class 2			
Bluetooth				
Support type:	☒ BR ☒ EDR ☐ BLE-1Mbps ☐ BLE-2Mbps			

Note:</

3.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	
Contact information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications:	Type	Accreditation Number
	FCC Registration Number	762235
	FCC Designation Number	CN1181

3.5. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Ambient temperature	18 °C to 25 °C
Ambient humidity	30%RH to 70%RH
Air Pressure	950-1050mbar

4. Equipments Used during the Test

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Cal. date (YY-MM-DD)	Due date (YY-MM-DD)
●	Data Acquisition Electronics DAEx	SPEAG	HTWE0313-05	DAE4	1549	2023/03/27	2024/03/26
●	E-field Probe	SPEAG	HTWE0313-06	EX3DV4	7494	2023/04/17	2024/04/16
●	Phantoms	SPEAG	HTWE0313-12	SAM-Twin V8.0	1947	N/A	N/A
●	Head TSL	SPEAG	-	HBBL600-10000V6	SL AAH U16 BC	N/A	N/A
●	Temperature & humidity	MIAO XIN	HTWE0319	TH20R-EX	-	2023/04/03	2024/04/02
●	Universal Radio Communication Tester	R&S	HTWE0323	CMW500	137681	2023/05/04	2024/05/03
Tissue-equivalent liquids Validation							
●	Dielectric Assessment Kit	SPEAG	HTWE0315-02	DAK-3.5	1267	N/A	N/A
●	Network analyzer	Keysight	HTWE0331	E5071C	MY46733048	2023/08/18	2024/08/17
●	Thermometer	LKM	HTWE0317	DTM3000	3693	2023/04/03	2024/04/02
System							

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. SAR Measurement System Configuration

6.1. SAR Measurement Set-up

The DASY5 system for performing compliance tests consists of the following items:

A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

A unit to operate the optical surface detector which is connected to the EOC.

The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.

The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003.

DASY5 software and SEMCAD data evaluation software.

Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

The generic twin phantom enabling the testing of left-hand and right-hand usage.

The device holder for handheld Mobile Phones.

Tissue simulating liquid mixed according to the given recipes.

System validation dipoles allowing to validate the proper functioning of the system.

6.2. DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

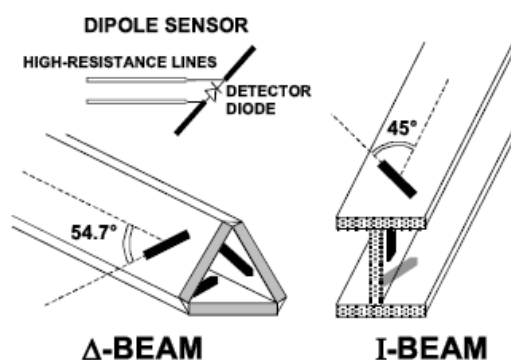
● Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	4 MHz to 10 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 W/kg; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 6 GHz Dosimetry in strong gradient fields Compliance tests of Mobile Phones
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

◆ Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

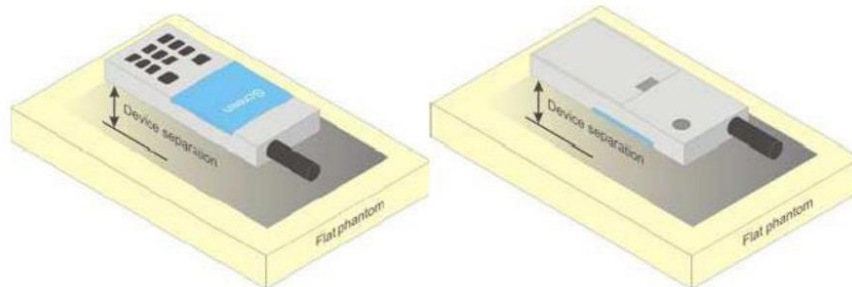
SAR: local specific absorption rate in W/kg
Etot: total field strength in V/m
 σ : conductivity in [mho/m] or [Siemens/m]
 ρ : equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

8.2. Body Position

Devices that support transmission while used with body-worn accessories must be tested for body-worn accessory SAR compliance, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.

Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance $\leq 5\text{mm}$ to support compliance.



Picture 4 Test positions for body-worn devices

9. Dielectric Property Measurements & System Check

9.1. Tissue Dielectric Parameters

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3-4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

The dielectric constant (ϵ_r) and conductivity (σ) of typical tissue-equivalent media recipes are expected to be within $\pm 5\%$ of the required target values; but for SAR measurement systems that have implemented the SAR error compensation algorithms documented in IEEE Std 1528, to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, the tolerance for ϵ_r and σ may be relaxed to $\pm 10\%$. This is limited to frequencies $\leq 3\text{ GHz}$.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Tissue dielectric parameters for Head		
Target Frequency (MHz)	Head	
	ϵ_r	$\sigma(\text{S/m})$
750	41.9	0.89
835	41.5	0.90
1750	40.1	1.37
1800-2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
5200	36.0	4.6

Measurement Results:

Head											
Frequency (MHz)	1g SAR			10g SAR			Delta (1g)	Delta (10g)	Limit	Temp (°C)	Date
	Target 1W	Normalize to 1W	Measured 250mW	Target 1W	Normalize to 1W	Measured 250mW					
750	8.32	8.80	2.20	5.48	5.80	1.45	5.77%	5.84%	±10%	22.0	2024/3/14
835	9.53	9.56	2.39	6.13	6.24	1.56	0.31%	1.79%	±10%	22.0	2024/3/14
1750	36.50	37.28	9.32	19.40	20.00	5.00	2.14%	3.09%	±10%	22.0	2024/3/15
1900	40.80	42.40	10.60	21.10	22.28	5.57	3.92%	5.59%	±10%	22.0	2024/3/18
2600	56.40	56.00	14.00	25.30	25.44	6.36	-0.71%	0.55%	±10%	22.0	2024/3/14

10. SAR Exposure Limits

SAR assessments have been made in line with the requirements of FCC 47 CFR § 2.1093.

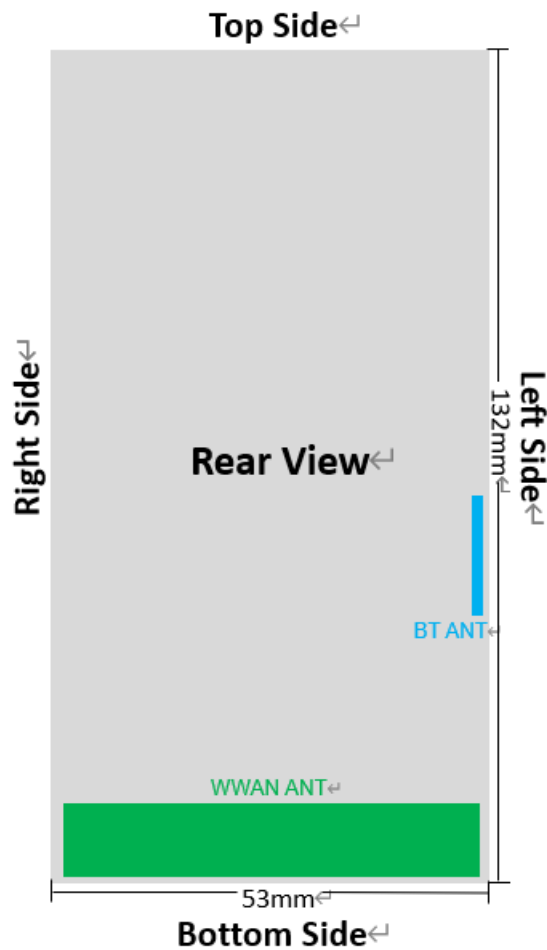
Type Exposure	Limit (W/kg)	
	General Population/ Uncontrolled Exposure Environment	Occupational/ Controlled Exposure Environment
Spatial Average SAR (whole body)	0.08	0.4
Spatial Peak SAR (1g cube tissue for head and trunk)	1.6	8.0
Spatial Peak SAR (10g for limb)	4.0	20.0

Note:

1. *Population/Uncontrolled Environments: are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.*
2. *Occupational/Controlled Environments: are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).*

12. RF Exposure Conditions (Test Configurations)

12.1. Antenna Location



15. Simultaneous Transmission analysis

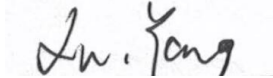
No.	Simultaneous Transmission Configurations	Head	Body-worn	Note
1	GSM(voice) + Bluetooth (data)	Yes	Yes	
2	WCDMA(voice) + Bluetooth (data)	Yes	Yes	
3	GPRS (data) + Bluetooth (data)	Yes	Yes	
4	WCDMA (data) + Bluetooth (data)	Yes	Yes	
5	LTE + Bluetooth (data)	Yes	Yes	

General note:

1. EUT will choose either GSM or WCDMA LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
2. The reported SAR summation is calculated based on the same configuration and test position

Simultaneous Transmission data:

Please refer to appendix report

Project No.	SHT2403015401W		
Test sample No.	YPHT24030154002	Model No.	GT40
Start test date	2024/3/7	Finish date	2024/3/22
Temperature	22.5°C	Humidity	51%
Test Engineer	Xiaodong Zhao	Auditor	

Appendix clause	Test Item	Result
A	Conducted Power Measurement Results	PASS
B	SAR Measurement Results	PASS
C	Simultaneous Transmission analysis	PASS

Appendix A:Conducted Power Measurement Results-GSM

GSM850		Burst Average Power (dBm)			Tune-up limit (dBm)	Division Factors	Frame-Average Power (dBm)			Tune-up limit (dBm)
		CH128	CH190	CH251			CH128	CH190	CH251	
		824.2MHz	836.6MHz	848.8MHz			824.2MHz	836.6MHz	848.8MHz	
GSM		31.54	31.54	31.58	32.00	-9.03	22.51	22.51	22.55	22.97
GPRS (GMSK)	1Tx slot	31.54	31.55	31.57	32.00	-9.03	22.51	22.52	22.54	22.97
	2Tx slots	30.00	30.16	30.24	30.50	-6.02	23.98	24.14	24.22	24.48
	3Tx slots	28.24	28.38	28.48	28.50	-4.26	23.98	24.12	24.22	24.24
	4Tx slots	25.79	25.97	26.09	26.50	-3.01	22.78	22.96	23.08	23.49

15	QPSK	1	0	23.45	23.26	23.57	24.00
			38	23.44	23.34	23.71	
			74	23.48	23.23	23.62	
		38	0	22.52	22.54	22.59	23.00
			18	22.56	22.54	22.63	
			37	22.55	22.55	22.64	
		75	0	22.51	22.44	22.59	23.00
	16QAM	1	0	22.57	22.40	23.28	23.50
			38	22.54	22.41	23.29	
			74	22.62	22.48	23.30	
		38	0	22.55	22.54	22.62	23.00
			18	22.55	22.54	22.64	

15	QPSK	1	0	23.68	23.33	23.63	24.00
			38	23.69	23.40	23.75	
			74	23.69	23.32	23.68	
		38	0	22.63	22.81	22.60	23.00
			18	22.72	22.68	22.75	
			37	22.71	22.68	22.73	
		75	0	22.65	22.67	22.53	23.00
	16QAM	1	0	22.74	22.53	22.62	23.00
			38	22.73	22.49	22.64	
			74	22.71	22.46	22.76	
		38	0	22.61	22.81	22.82	23.00
			18	22.71	22.68	22.74	

Appendix A:Conducted Power Measurement Results-Bluetooth

Bluetooth						
Mode		Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)	Tune-up limit (dBm)
EDR	GFSK	0	2402	-5.26	-5.99	-5.00
		39	2441	-7.38	-8.11	-8.00
		78	2480	-7.44	-8.17	-8.00
	π /4QPSK	0	2402	-3.23	-3.96	-3.00
		39	2441	-5.48	-6.21	-6.00
		78	2480	-5.57	-6.30	-6.00
	8DPSK	0	2402	-2.98	-3.71	-3.00
		39	2441	-5.21	-5.94	-5.00
		78	2480	-5.33	-6.06	-6.00

